HEALTH CONSEQUENCES OF RACIST AND ANTIGAY DISCRIMINATION FOR MULTIPLE MINORITY ADOLESCENTS

by

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ABSTRACT

Research has shown that individuals who belong to a marginalized group and who perceive discrimination based on that group membership suffer from a variety of poor health outcomes. However, many individuals belong to more than one marginalized group, and much less is known about the influence of multiple forms of discrimination on health outcomes.

Several competing theoretical frameworks describe how multiple forms of stress might combine to affect health, and each of these theories has the potential to inform the literature on discrimination in multiple minority individuals. First, multiple stressors can influence health in an additive way: each additional stressor predicts health above and beyond previous stressors. Second is the prominence model: while one form of discrimination is independently damaging with regard to health, the combination of two or more forms is not significantly worse than the effects of just one. Finally, multiple stressors could also interact such that each successive stressor exacerbates or multiplies the effects of previous stressors.

The current study examined the influence of multiple forms of discrimination in a population of African American lesbian, gay, or bisexual (LGB) adolescents. The primary aim of this study was to test each of the three models described above to determine which best describes how racist and antigay discrimination combine to predict depression, suicidal ideation, and substances use in a sample of African American LGB

adolescents. Participants were included in this analysis if they identified their ethnicity as either African American (*n*=156) or African American mixed (*n*=120). Mean age was 17.45 (*SD*=1.36).

Perceived racist and antigay discrimination were each associated with depression and suicidal ideation. However, racist discrimination was prominent in the prediction of examined substance use outcomes, including binge drinking and recent marijuana use.

Results reveal that both forms of mistreatment have important associations with depression and suicidal ideation among LGB African American adolescents. Racism was more strongly associated with substance use. Future intervention efforts should be targeted towards reducing discrimination and improving the social context of multiple minority adolescents.

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INTRODUCTION

Discrimination and Health Outcomes

Previous research has shown that perceived discrimination is associated with multiple physical and mental health problems (Gee, Spencer, Chen, & Takeuchi, 2007; Kessler, Mickelson, & Williams, 1999; Mays & Cochran, 2001; for review see Pascoe & Smart Richman, 2009). Health outcomes which have been linked to discrimination include cardiovascular disease (Brondolo, et al., 2008; Din-Dzietham, Nembhard, Collins, & Davis, 2004; Lewis, et al., 2006; A. M. Ryan, Gee, & Laflamme, 2006), substance use (Mays & Cochran, 2001; Whitbeck, Chen, Hoyt, & Adams, 2004; D. R. Williams, Neighbors, & Jackson, 2003; Zucker & Landry, 2007), psychological distress (Fischer & Holz, 2007; Frable, Wortman, & Joseph, 1997; Liebkind & Jasinskaja-Lahti, 2000; Murry, Brown, Brody, Cutrona, & Simons, 2001), and depressive symptoms (Finch, Kolody, & Vega, 2000; Kessler, et al., 1999; Zakalik & Wei, 2006). These effects are consistent across discrimination based upon various stigmatized identities (Pascoe & Smart Richman, 2009), including race/ethnicity (Finch, Hummer, Kolody, & Vega, 2001; Gee, et al., 2007; Mays, Cochran, & Barnes, 2007; Pérez, Fortuna, & Alegría, 2008; D. R. Williams, et al., 2003), gender (Fischer & Holz, 2007; Klonoff, Landrine, & Campbell, 2000; Moradi & Subich, 2003; Zucker & Landry, 2007), age (Garstka, Schmitt, Branscombe, & Hummert, 2004), sexual orientation (Frable, et al., 1997; Huebner & Davis, 2007; Mays & Cochran, 2001; Meyer, 2003), immigrant status

(Jasinskaja-Lahti, Liebkind, & Perhoniemi, 2007; Liebkind & Jasinskaja-Lahti, 2000; Noh, Kaspar, & Wickrama, 2007; A. M. Ryan, et al., 2006), disability (Gouvier & Coon, 2002), and religious affiliation (Gold, 2004; Padela & Heisler, 2010).

According to several recent studies, experiences of discrimination are prevalent and predict negative outcomes in adolescent populations as well (Almeida, Johnson, Corliss, Molnar, & Azrael, 2009; Brody, et al., 2006; Fisher, Wallace, & Fenton, 2000; Greene, Way, & Pahl, 2006; Umaña-Taylor & Updegraff, 2007). Much like the adult studies reviewed above, studies of adolescents who experience or perceive any form of discrimination show they are more prone to negative outcomes, including conduct problems (Brody, et al., 2006), detachment from school (Verkuyten & Thijs, 2004), psychological distress (Fisher, et al., 2000), depressive symptoms (Almeida, et al., 2009; Brody, et al., 2006; Greene, et al., 2006; Szalacha, et al., 2003; Umaña-Taylor & Updegraff, 2007; T. Williams, Connolly, Pepler, & Craig, 2005), low self-esteem (Greene, et al., 2006; Szalacha, et al., 2003), and suicidal ideation and self-harm (Almeida, et al., 2009). Adolescents who are discriminated against exhibit these outcomes across various types of discrimination, including race-based (Brody, et al., 2006; Greene, et al., 2006; Umaña-Taylor & Updegraff, 2007) and antigay (Almeida, et al., 2009; Hershberger & D'Augelli, 1995; T. Williams, et al., 2005) discrimination.

While discrimination has profound effects among both adult and adolescent populations, many individuals belong to more than one marginalized group (e.g., African American lesbians, Jewish women, Asian Americans with a mental illness). Compared to the literature describing one form of discrimination, relatively little is known about individuals who experience multiple forms of discrimination. Thus, the primary goal of

the present study is to contribute to our understanding of how multiple forms of discrimination combine to influence health among individuals with multiple minority identities.

Theoretical Framework for Understanding the Effects of Multiple Forms of Discrimination

Although the literature on the effects of multiple forms of discrimination is currently small, there is a more robust literature on the influence of other stressors more generally and how they influence outcomes when they co-occur. This literature might shed light on the effects of multiple forms of discrimination, as discrimination is widely recognized as a distinct form of stress (Meyer, 2003). In conceptualizing the ways in which multiple forms of discrimination affect people, Raver and Nishii (2010) describe three ways in which discrimination (or stressors more generally) could combine to influence outcomes among multiple minority individuals. Raver and Nishii's (2010) conceptual model of combined stressors posits that forms of discrimination can combine in an additive, inuring, or exacerbating fashion. Although this conceptualization offers a useful starting point for understanding how multiple forms of discrimination can combine to impact health, it might not fully capture the variety of ways in which these phenomena operate. A more complete discussion follows.

Additive models of combined stressors

Multiple stressors can influence health outcomes in an additive or cumulative way. The theory of additive stressors implies that each individual stressor influences

health independently of other stressors, and thus when modeled together, each stressor is associated with health above and beyond all other stressors (Holmes & Rahe, 1967). Multiple stressors are known to additively predict various psychological and health outcomes, including depression, anxiety, ADHD, academic achievement, aggression, and sexual initiation, in child and adolescent populations (Forehand, Biggar, & Kotchick, 1998; Mitchell, Rumbaugh Whitesell, Spicer, Beals, & Kaufman, 2007; Morales & Guerra, 2006; Roberts, Roberts, & Wenyaw, 2009). In addition, support for an additive or cumulative model of multiple stressors has been found in previous studies assessing adult health, including birth outcomes and cardiovascular disease (Giscombé & Lobel, 2005; Orth-Gomér & Leineweber, 2005).

Additive or cumulative models of the effects of multiple forms of discrimination have been tested somewhat less frequently, with mixed results. In some studies, the cumulative effects of two or more forms of discrimination experienced by multiple minority individuals are no more predictive of psychological outcomes than just one kind of mistreatment (Bianchi, Zea, Poppen, Reisen, & Echeverry, 2004; Gold, 2004; Kessler, et al., 1999; Moradi & Subich, 2003; Yoshikawa, Wilson, Chae, & Cheng, 2004). In contrast, other studies do show support for an additive model of discrimination stress. In one study, levels of both socioeconomic status-based discrimination and racism were both independently predictive of self-perceived health status and depression when entered into the same multivariate model (Ren, Amick, & Williams, 1999). Furthermore, small additive effects were found for gender and ethnic harassment at work when predicting psychological and physical health outcomes (Raver & Nishii, 2010). Thus, existing

research examining an additive model of combined forms of discrimination is currently mixed.

Prominence models of combined stressors

Another possible way in which distinct forms of stress or discrimination can combine to influence outcomes is prominence. The idea of prominence is an extension of Raver and Nishii's (2010) inurement hypothesis: while one form of discrimination is independently damaging with regard to various health outcomes, the combination of two or more forms is not significantly worse than the effects of just one of the stressors. Thus, one form of stress will be more prominent – either in importance of the stressor and/or the consequences of the stressor – than other co-experienced stressors. From a conceptual standpoint, models of additivity and prominence are mutually exclusive and can be tested against each other in a single multivariate statistical model: if two stressors are entered together into a multivariate model, and only one is predictive of outcomes, this provides support for prominence. In other words, a lack of support for additivity lends support to prominence (as long as one stressor remains predictive) in a multivariate model.

There are several theoretical reasons that could lead one stressor to be more prominent than other co-occurring stressors. First, Raver and Nishii (2010) hypothesize a process of inurement, derived from psychological adaptation theory, which posits that an organism will habituate to stimuli to which it is repeatedly exposed. Subsequently, the organism will not react as strongly to other stimuli it perceives as similar to previously habituated stimuli (Helson, 1964). Raver and Nishii (2010) hypothesized that

"individuals will experience strain outcomes from a single form of harassment…but second or third forms of harassment may not add to these negative effects because they represent stimuli that are similar to those involved in one's adaptation level" (p. 240). However, the inurement hypothesis does not adequately explain why stressors which have been previously habituated to would predict more variance in outcomes than novel stressors. The work of Raver and Nishii (2010) did not address additional possibilities underlying the occurrence of prominence.

A second theoretical explanation for why prominence may occur is that individuals may become more adept at coping with stressors after experiencing multiple, co-occurring stressors. Studies of resilience reveal that individuals can flourish in the face of adversity, in part because of improved coping strategies. Research indicates that individuals become better at coping with stress over time (for review see Zimmer-Gembeck & Skinner, 2011), and more specifically, that adolescents become more adept at deploying effective and appropriate stressor-specific coping strategies over time. The same improved coping strategies may also be true of individuals who experience multiple forms of discrimination. In this case, it would be expected that the influence of the first stressor would be attenuated because a person has experienced this stressor for a longer amount of time and has been able to develop and deploy more effective coping strategies targeted at this stressor.

Third, identity centrality may cause one stressor to be more prominent than other co-occurring stressors, especially with regard to discrimination stress. If stressors are targeted towards identities (such as discrimination because of ethnicity, gender, etc.), the centrality of each identity to a person's self-concept will likely influence which stressor

will be more predictive of outcomes. It has been hypothesized that individuals develop a hierarchy of identities within their self-concept, and this hierarchy influences the ways in which individuals perceive discrimination aimed at their various identities (Crocker & Major, 1989). Centrality of the targeted identities could have two divergent implications for the idea of prominence: 1) discrimination towards identities central to someone's self-concept will be perceived more often and/or interpreted as more serious and threatening, and thus will have a larger influence on outcomes, or 2) discrimination targeted at identities more central to an individual's self-concept will be less severe because that individual can easily engage self-protective mechanisms (including attributing negative feedback to one's group membership) associated with membership in that group (Crocker & Major, 1989).

Fourth, the role of culture in the perception and interpretation of stressors could lead to one stressor becoming more prominent. Cultural influences on stressor interpretation and experience can vary by environment. For example, many LGB people of color report that they experience frequent racist discrimination within the gay community but then experience persistent antigay discrimination within their own cultural communities (Nemoto, et al., 2003). Culture could also influence the ways in which people perceive stress and discrimination, leading them to perceive and report more experiences with one type of stressor. For example, an Asian American individual who has been diagnosed with schizophrenia may interpret mistreatment by medical professionals as targeted at their mental health diagnosis rather than their race if they have internalized negative societal stigma attached to their schizophrenia diagnosis.

While the above theoretical explanations for the prominence of one stressor among multiple stressors are important in conceptualizing the combination of stressors, this study will not specifically examine these different possibilities. Prominence is a relatively new idea, but some previous research examining additive models of multiple forms of discrimination has tested the model indirectly (i.e., without any a priori discussion of what failure to find additivity would imply). Any additive model in which only one form of discrimination remains predictive has found support for prominence. Outcomes such as depression, psychological distress, job satisfaction, and health behaviors have been predicted by one prominent form of discrimination among multiple forms of discrimination (Bianchi, et al., 2004; Gold, 2004; Moradi & Mezydlo Subich, 2002; Raver & Nishii, 2010; Yoshikawa, et al., 2004). For example, in a sample of Jewish women, anti-Semitism predicted depression while sexism was not predictive in the same multivariate model (Gold, 2004).

Exacerbation models of combined stressors

Multiple stressors could also interact in a way in which each successive stressor exacerbates or multiplies the effects of each previous stressor. The exacerbation hypothesis emerges from energy theories which posit that an individual must tap into energy reserves in order to cope with stress (Hockey, 1997). Depleted energy reserves are subsequently unavailable to assist in adaptation to new stressors, exacerbating the influence of added stressors. Various studies have examined exacerbation of different kinds of stressors, including stressful life events and chronic environmental stressors, and evidence for a multiplicative model of combined stressors has been found with diverse

outcomes. Multiple stressors associated with low-income family environments are found to exacerbate the influence of stress in predicting health outcomes of children (Caspi, Bolger, & Eckenrode, 1987; Dozier & Peloso, 2006; McCubbin & Patterson, 1983). In previous research, significant interaction effects between job and marital strain predicted blood pressure (Tobe et al., 2005), revealing an exacerbating effect of each stressor on a health outcome.

However, few known studies have reported analyses of interactions of multiple forms of discrimination. A study of the combined effects of gender harassment and ethnic harassment in the workplace found no support for exacerbation (Raver & Nishii, 2010). In a sample of African American women, no multiplicative effect of racism and sexism was found for psychological distress (Moradi & Mezydlo Subich, 2002). On the other hand, a significant interaction between experienced antigay discrimination and sexism predicted psychological distress in a sample of lesbians (Szymanski, 2005). This study only examined physically enacted antigay discrimination (violent victimization), so it is unclear if less extreme forms of antigay discrimination would produce the same multiplicative effects.

Exacerbation models of combined forms of discrimination are also consistent with intersectionality, or the idea that multiple minority individuals' experiences and identities are best captured by combined identities rather than multiple discrete identities (Crenshaw, 1991). For example, a woman who is African American would hold one combined identity of African American woman rather than identifying as both a woman and an African American. Previous research has urged for evaluations of the intersections of multiple identities, as combinations of multiple identities can result in

unique forms of mistreatment (Stirratt, Meyer, Ouellette, & Gara, 2008). While an interaction term of two different forms of discrimination does not perfectly capture the subjective experience of intersectional discrimination (Crenshaw, 1991) this analytic method has been used in previous studies of intersectionality (Greenman & Xie, 2008).

Finally, the detection of a significant interaction term in a regression model containing perceptions of more than one form of stress may not always indicate that exacerbation is occurring. For example, one form of stress may predict variance in a target outcome only at very low levels of another form of stress. This could result in a significant interaction term in the model, but would be more consistent with the prominence model than the exacerbation model. In this case, discrimination of one type is prominent, but when it is absent, it provides "space" for other forms of discrimination to influence health.

Multicollinearity in models of combined stressors

In addition to the above possibilities, if two stressors are independently associated with an outcome, but then only one stressor is predictive of the same outcome in a multivariate model, multicollinearity is another possible explanation. Multicollinearity occurs when two independent variables in the same multivariate model are highly correlated (Cohen, Cohen, West, & Aiken, 2002). When examining multiple stressors or discrimination experiences, it is possible that these predictors could be highly correlated. As a result of multicollinearity, small changes in the model or the data can cause larges changes in coefficient estimates (Cohen, et al., 2002), which could cause one stressor to erroneously appear to predict variance in an outcome above and beyond other highly

correlated stressors. In addition, two stressors may predict the same variance in an outcome. In other words, if there is only a certain amount of stress-based variance in an outcome, two stressors may both overlap in predicting this variance, leading to one stressor appearing to be prominent above and beyond the other when the two stressors actually predict a similar amount of variance.

Present Study

The primary aim of this study is to examine all three models of combined stressors to determine which has the most validity in describing how racist and antigay discrimination combine to predict substance use, depressive symptoms, and suicidal ideation in a sample of African American LGB adolescents. This multiple minority group could constitute a particularly vulnerable population (Harper, Jernewall, & Zea, 2004). Adult racial minority LGB individuals experience the same amount of antigay prejudice as white LGB individuals, but they also experience significant amounts of racism (Meyer, Schwartz, & Frost, 2008). These two forms of discrimination may be especially salient when combined, as this population often reports persistent experiences of racism not only in their everyday lives, but also within the LGB community. In addition, they face antigay discrimination within their own cultural community, including their family unit (Nemoto, et al., 2003). In other words, these multiple minority individuals often have no completely safe or stress-free social environment: sources of support for one kind of discrimination are often sources of another form of discrimination. African American LGB adolescents could be especially vulnerable to adverse outcomes, as they are only beginning to "come out" and integrate their sexual

orientation into their larger identity. As a result, the African American LGB adolescents in this study may only be beginning to experience antigay discrimination, and the novelty of this stressor may uniquely alter the ways in which concurrent forms of discrimination combine.

It has been repeatedly demonstrated that LGB adolescents exhibit higher rates of substance use (for review see Marshal, et al., 2008) and more depressive symptoms and suicidal behaviors (for review see Marshal, et al., 2011) than their heterosexual peers. These disparities in health indicators are likely the result of discrimination experienced in a variety of social contexts (Meyer, 2003), especially the adolescents' school environments (Almeida, et al., 2009; Birkett, Espelage, & Koenig, 2009; Espelage, Aragon, Birkett, & Koenig, 2008). In addition, African American adolescents who experience racism are at increased risk for depressive symptoms (Brody, et al., 2006; Greene, et al., 2006). No known studies have examined concurrent experiences of racist and antigay discrimination in a sample of African American LGB adolescents.

While little is known about the combination of these two forms of discrimination in adolescent populations, some previous research has examined the combined influence of racist and antigay discrimination within racial minority LGB adults. Racism is predictive but antigay discrimination is not in predicting life satisfaction (Crawford, Allison, Zamboni, & Soto, 2002), health habits (Bianchi, et al., 2004), and depression (Yoshikawa, et al., 2004) among racial minority gay and bisexual men, providing evidence for the prominence hypothesis. However, other studies examining psychological distress among racial/ethnic minority gay and bisexual men have found evidence for an additive effect of perceived racist and antigay discrimination (Díaz,

Ayala, & Bein, 2004; Díaz, Ayala, Bein, Henne, & Marin, 2001). No known studies have examined a multiplicative model of combined racist and antigay discrimination. In addition, no known studies have tested models of combined racist and antigay discrimination with a sample which includes female participants or with a sample of adolescents.

While previous research within adult populations has offered the most support for a prominence model in describing the combined effects of racist and antigay discrimination among adolescents, no previous studies have evaluated the influence of concurrent racist and antigay discrimination from a sufficiently theoretical perspective. Even in research on other populations, only one (Raver & Nishii, 2010) of the above cited studies of multiple forms of discrimination has approached these issues with a thorough theoretical framework in place. The current study makes a significant contribution to the growing literature addressing multiple forms of discrimination by expanding upon the theoretical model of Raver and Nishii (2010).

While these models have not been previously tested with a sample of African American LGB adolescents and may be complicated by unique developmental issues within an adolescent sample, drawing on studies of adults has provided the most evidence for the idea of prominence. In addition, racism has been the prominent stressor in most previous studies examining concurrent racist and antigay discrimination. Thus, it is hypothesized that racism will take prominence while antigay discrimination will not be predictive in multivariate tests of their relationships with substance use, depressive symptoms, and suicidal behavior.

METHOD

Procedure

Data were collected as part of the Diverse Adolescents Sexual Health (DASH) study, a cross-sectional assessment of a variety of health behaviors and outcomes reported by an ethnically diverse sample of LGB adolescents. Adolescents were recruited from April 2007 to May 2010 through direct outreach at community centers serving LGB youth in four cities: Indianapolis, Boston, Philadelphia, and Oakland, CA. Recruitment was also conducted through advertisements including fliers and online social networking sites (MySpace and Facebook).

Adolescents who arrived at one of the community centers to attend services or complete the DASH questionnaire were approached by a member of our study team. This member explained the DASH survey and assessed the adolescent's interest in participating. If an adolescent was interested in participating in the research, he/she was directed to an organization staff member who was not a member of the research study team. This additional step allowed all adolescents involved in the study to speak with an unbiased person whom could ensure that no harm would come from participating in the survey. If the adolescent then reported interest in participating, a study team member obtained his/her verbal assent to participate and brought the youth to a private room in the offices of the community center.

All participating adolescents were then oriented to the Automated Computer Assisted Self-Interview (ACASI) program used to complete the questionnaire. The ACASI program allows the interviewee to listen to questions through earphones and enter their responses into a laptop computer. The increased privacy of this data collection method has been found to elicit higher response rates from adolescents on potentially sensitive variables such as same-sex sexual behaviors, substance use, and depression (Supple, Aquilino, & Wright, 1999; Turner, Ku, Sonenstein, & Pleck, 1996). Participants were left alone to respond to the questionnaire, which was completed in 35-65 minutes. Finally, participants were compensated with a $25 gift card upon completion of any portion of the survey.

Participants

A total of 589 complete cases were collected. In order to be included in the study, participants had to be within the ages of 14 and 19. In addition, participants were only included if they reported a nonheterosexual (i.e., gay, lesbian, bisexual, queer, etc.) sexual orientation and/or same-sex sexual behaviors involving genital contact within the past year. Thirty percent of the sample self-identified their ethnicity as white, 27% as African American, 20% as African American mixed, 12% as multiracial (not including African American), and 11% identified with another racial group.

Participants were included in the present analysis if they identified their ethnicity as either African American (n = 156) or African American mixed (n = 120). Thirty-three percent of this subsample identified their gender as female, 59% as male, and 8% of participants identified as transgendered. Fifty-nine percent of the selected participants

identified their sexual orientation as gay or lesbian, 27% as bisexual, and 14% identified as "queer" or with some other sexual orientation. Subsample participants' ages ranged from 14 – 19 and had a mean of 17.45 (*SD* = 1.36).

Measures

Experiences of racist discrimination were assessed with 13 items adapted from The Schedule of Racist Events (Landrine & Klonoff, 1996). These items addressed racist discrimination during the past year in many contexts, including school, work, and community settings. Sample items include "In the past year, how often have you been called a racist name?" and "In the past year, how often have you been treated unfairly by teachers or professors because of your race or ethnicity?" Participants reported how often they had experienced each form of racist discrimination using a 4-point scale (0 = Never, 1 = Once or twice, 2 = A few times, 3 = Many times), and composite mean scores of all 13 items were calculated for each participant. This measure has strong internal consistency and has shown good predictive validity with measures of psychological distress (Landrine & Klonoff, 1996). The scale has previously been adapted for use with LGB populations (Huebner & Davis, 2007) and has strong reliability within adolescent samples (Brody, et al., 2006).

Experiences of antigay discrimination were assessed with 10 questions which address antigay discrimination experienced at school. These items were adapted from a survey of mistreatment of sexual minority students in schools (Harris Interactive, 2005). These questions addressed both mistreatment by peers (e.g., "While at school, have you been picked on?") and teachers and/or administrators (e.g., "While at school, have you

been treated unfairly by teachers or administrators"). All questions were answered "Yes" or "No." For each of these items, participants were asked: "How often did this occur because people knew or assumed you were LGB?" Participants indicated how many times they experienced each form of mistreatment because of their sexual orientation (0 = Never, 1 = Once or twice, 2 = A few times, 3 = Many times), and one composite mean score of perceived antigay discrimination was calculated for each participant.

Substance use was measured with items from the National Longitudinal Study of Adolescent Health (Harris, et al., 2009) and items recommended for use with youth by the Substance Abuse and Mental Health Services Administration (SAMHSA, 2005). Frequency of smoking cigarettes was operationalized as the number of days in the past month a participant had smoked (0 = 0 days, 1 = 1 – 5 days, 2 = 6 – 14 days, 3 = 15 – 29 days, and 4 = 30 or more days). Marijuana use during the past month was also operationalized based upon how many days participants reported using marijuana (0 = 0 days, 1 = 1 – 6 days, 2 = 7 – 25 days, 3 = 26 or more days). Frequency of alcohol use was assessed with one question: "During the past 12 months, on how many days did you drink?" This item was measured on a 7-point Likert scale with response options ranging from "none" to "every day or almost every day." Using the same Likert scale, binge drinking was assessed with one question: "During the past 12 months, on how many days did you drink five or more drinks in a row?"

Twenty items from the CES-D were used to measure depressive symptoms (Radloff, 1977). These items addressed dysphoric mood, vegetative symptoms, irritability, and hopelessness. Sample items included "In the past week, I felt depressed," "In the past week I felt that I could not shake off the blues, even with help from my

family and friends," and "In the past week I thought my life had been a failure." All items were answered on a 4-point Likert scale (0 = never or rarely, 1 = sometimes, 2 = a lot of the time, 3 = most of the time or all of the time). Composite mean scores of all 20 items were estimated. This measure has been shown to have strong internal consistency and reliability when used with adolescents (Roberts, Andrews, Lewinsohn, & Hops, 1990) and has good concurrent validity with clinical interviews assessing mood disorders among ethnic minority adolescents (Prescott, et al., 1998).

Suicidal ideation was measured with one commonly-used dichotomized item (Kann, et al., 1998). Participants replied "Yes" or "No" to: "During the past 12 months, have you ever seriously thought about committing suicide?"

An estimate of how many others each participant had revealed their minority sexual identity to was estimated for each case. This measure of "outness" was calculated from composite mean scores based upon how many immediate family members, school peers, and friends knew that a participant identified as LGB.

RESULTS

Covariate associations

Table 1 presents descriptive statistics and associations between all continuous predictors, outcomes of interest, and potential covariates. Potential categorical covariate associations with each outcome and form of mistreatment were examined. Gender was associated with marijuana use ($F = 4.57$, $p = .011$) and perceptions of antigay discrimination ($F = 15.11$, $p < .001$). City of recruitment was associated with cigarette smoking ($F = 9.24$, $p < .001$), alcohol use during the past year ($F = 4.46$, $p = .005$), marijuana use ($F = 6.36$, $p < .001$), and perceptions of racist discrimination ($F = 3.38$, $p = .019$). Sexual orientation was associated with perceptions of antigay discrimination ($F = 8.01$, $p < .001$). Ethnicity (African American versus African American mixed) was not significantly associated with target outcomes or with levels of perceived racist or antigay discrimination. Therefore, ethnicity was not included as a covariate in subsequent analyses.

Estimates of racist and antigay discrimination in separate models

To determine whether racist and antigay discrimination separately predicted depression and suicidal ideation, two sets of ordinary least squares (OLS) and logistic regression models (respectively for each outcome) were estimated. In each set, antigay discrimination or racist discrimination were used to predict each outcome, controlling for

age, gender, sexual orientation, outness, and city of recruitment. Results indicated that when considered in separate models, both racist and antigay discrimination were independently associated with depression and suicidal ideation above and beyond other covariates (see Table 2). In each case, greater levels of perceived discrimination were associated with increased depression and suicidal ideation.

In predicting substance use outcomes, antigay and racist discrimination were entered into separate regression models along with demographic covariates (see Table 2). Racist and antigay discrimination were both independently unassociated with number of cigarettes smoked during the past month and frequency of drinking alcohol during the past year. Binge drinking was marginally associated with reported racist discrimination. While antigay discrimination was not independently associated with marijuana use during the past month, racist discrimination was independently associated with this outcome above and beyond all covariates. For marijuana use during the past month, greater levels of perceived racist discrimination were associated with greater substance use.

Multivariate model estimates of racist and antigay discrimination

To examine the combined effects of racist and antigay discrimination, both variables were entered as predictors together, along with their interaction and the above covariates, into a single regression model. Separate models were calculated for depression, suicidal ideation, and each substance use outcome (see Table 3 for results from all multivariate models). Prior to computing the interaction term, both racist and antigay discrimination were centered to reduce collinearity in the interaction (Aiken & West, 1990).

Table 1

Intercorrelations among primary study variables

	M	SD	1	2	3	4	5	6	7	8	9	10
1. Age	17.45	1.36	-	.20**	0.06	0.08	-0.05	-0.03	0.16*	0.08	.33**	.32**
2. Outness	2.24	1.22		-	-0.01	.20**	-0.08	-0.10	.23**	0.03	0.09	0.08
3. Racist discrim.	0.50	0.48			-	.19**	.25**	.12*	0.10	.22**	-0.02	0.15
4. Anti-gay discrim.	1.20	0.81				-	0.10	.13*	-0.01	0.00	0.05	0.08
5. Depression	0.97	0.56					-	.35**	.14*	.17**	-0.03	.19*
6. Suicidal ideation	0.23	0.42						-	0.04	.19**	0.01	0.13
7. Smoking	1.15	1.52							-	.39**	.23**	0.16
8. Marijuana use	0.46	0.90								-	.20*	.28*
9. Alcohol frequency	2.58	1.57									-	.47**
10. Binge drinking	1.23	1.73										-

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 2

Independent associations of each form of mistreatment with outcomes in separate multivariate regression model for each outcome

	Depression			Suicidal Ideation¥		Frequency of smoking			Marijuana use			Frequency of alcohol use			Binge Drinking		
	B	S.E.	β	B	S.E.	B	S.E.	β	B	S.E.	β	B	S.E.	β	B	S.E.	β
Racist	0.309***	0.071	0.268	.763*	0.313	0.124	0.194	0.040	0.334**	0.108	0.183	-0.144	0.243	-0.046	0.523†	0.277	0.147
Anti-gay	0.146**	0.049	0.206	.752***	0.235	0.047	0.130	0.025	0.130	0.076	0.113	0.163	0.163	0.084	0.188	0.184	0.090

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p = .061$
¥ Logistic regression used to estimate dichotomous outcome

Table 3

Multivariate associations of each form of mistreatment and their interaction in separate multivariate regression model for each outcome

	Depression			Suicidal Ideation¥		Frequency of smoking			Marijuana use			Frequency of alcohol use			Binge Drinking		
	B	S.E.	β	B	S.E.	B	S.E.	β	B	S.E.	β	B	S.E.	β	B	S.E.	β
Racist	.254***	0.079	0.221	0.561	0.363	0.125	0.214	0.040	0.339**	0.123	0.181	-0.216	0.254	-0.071	.700*	0.303	0.200
Anti-gay	0.103*	0.050	0.146	0.684**	0.241	0.029	0.134	0.015	0.076	0.078	0.065	0.184	0.171	0.095	0.125	0.190	0.060
Interaction	0.076	0.093	0.053	-0.287	0.417	-0.162	0.250	-0.043	-.327*	0.146	-0.140	0.138	0.314	0.036	-0.566	0.360	-0.136

* $p < .05$, ** $p < .01$, *** $p < .001$
¥ Logistic regression used to estimate dichotomous outcome
Note: For all models, interactions were initially included and then removed if non-significant. Including non-significant interactions did not alter estimations of any model.

Results from OLS regression indicated that both antigay and racist discrimination uniquely predicted a significant amount of variance in levels of depression. While racist discrimination was a somewhat stronger predictor of depression, there was an additive effect of antigay discrimination in the same multivariate model.

With regard to suicidal ideation, logistic regression models indicated that antigay discrimination, but not racist discrimination, was associated with suicidal ideation. Participants who reported higher levels of perceived antigay discrimination reported nearly two times the odds of suicidal ideation in the past 12 months.

Neither racist nor antigay discrimination, together in the same multivariate model, were significantly associated with number of cigarettes smoked during the past month or frequency of drinking alcohol during the past year**.** In a multivariate OLS regression model, racist discrimination was significantly associated with binge drinking while antigay discrimination was not associated above and beyond racism and other covariates.

Finally an OLS regression model estimating marijuana use during the past month found a significant interaction between racist and antigay discrimination. When examining this interaction across varying levels of racist discrimination, results indicated that perceived antigay discrimination was a significant predictor of marijuana use only at levels of perceived racist discrimination one standard deviation below the mean (B = .233, SE B = .102, β = .202, p = .023). In addition, there was a significant main effect of racist discrimination with marijuana use during the past month in the multivariate model.

Models including interactions between both forms of mistreatment and gender

In order to assess whether associations of racist and antigay discrimination with all outcomes varied for males and females, models including two-way interaction terms between gender and racist discrimination and antigay discrimination, as well as their three-way interaction, were estimated. For the purpose of these analyses, participants who identified their current gender as transgendered were recoded to their biological sex at birth (one participant who reported sex at birth as intersex was excluded). This was done in order to include transgendered participants in this set of model estimates while preserving adequate power to detect interactions with gender.

A significant three-way interaction between gender, racist discrimination, and antigay discrimination in the prediction of cigarettes smoked was identified (B = 1.594, SE B = .619, β = .197, $p = .011$). Probing this interaction across categories of gender, a significant interaction between racist and antigay discrimination emerged among females (B = 1.127, SE B = .480, β = .178, $p = .020$), but was non-significant for male participants. A significant interaction between racist discrimination and gender was associated with cigarette use, but only among participants who also reported medium or high (B = 2.414, SE B = .684, β = .381, $p < .001$) levels of antigay discrimination. In other words, for only female participants, increased perceptions of antigay discrimination multiplied the influence of racist discrimination on their smoking outcomes.

DISCUSSION

Similar to much previous research with minority individuals who experience various forms of discrimination, higher levels of both antigay and racist discrimination were independently associated with greater depression and suicidal ideation. Only racist discrimination was independently associated with marijuana use during the past month. In addition, neither form of discrimination was independently associated with frequency of drinking alcohol, number of cigarettes smoked, or binge drinking.

When testing multivariate models including both racist and antigay discrimination, an additive effect was found in predicting depression. This result aligns with previous research examining the associations between racist and antigay discrimination and psychological distress among adult Latino gay and bisexual men (Díaz, et al., 2001). Taken together, results from previous research and the present study indicate both racist and antigay discrimination are important factors in multiple minority individuals' mental health outcomes, even when they co-occur. The present study extends this finding to an adolescent sample of African American LGB adolescents.

Despite both forms of discrimination being independently associated with suicidal ideation, only antigay discrimination was associated above and beyond all other covariates in a multivariate model predicting suicidal ideation. However, it is possible that multicollinearity was occurring within estimated multivariate models. Both forms of mistreatment were significantly associated with suicidal ideation, and the two forms of

mistreatment were significantly correlated (r = .186). Because the zero-order correlation of antigay discrimination with suicidal ideation was slightly stronger (r = .126) than the correlation between racist discrimination and suicidal ideation (r = .120), the overlap in variance between these two forms of mistreatment is assigned to antigay discrimination in the multivariate model. Thus, both racist and antigay discrimination are important with regard to African American LGB adolescents' suicidal ideation. Previous research has strongly linked antigay discrimination, including in-school victimization, with suicidality among sexual minority adolescents (Almeida, et al., 2009; Hershberger, Pilkington, & D'Augelli, 1997; Marshal, et al., 2011), but no known previous studies have examined associations between racism and suicidality among adolescents.

One important issue raised by the current study is the way in which depression was predicted by both forms of mistreatment in an additive fashion while multicollinearity occurred in the prediction of suicidal ideation. Because suicidal ideation is a dichotomous outcome, there is less variance to predict in the logistic regression model. In addition, it is possible that racist and antigay discrimination are contributing to different parts of the construct of depression, but they are contributing to the same part of suicidal ideation. For example, both forms of mistreatment may contribute to feelings of hopelessness, a component of both suicidal ideation and depression, but only one form of mistreatment may contribute to sleep disturbances, a component of depression.

Results from the present study indicate that racist discrimination has more clear associations with substance use outcomes for African American LGB adolescents than does antigay discrimination. This was especially true of more serious drug use, including

marijuana use and binge drinking, compared to more "normative" substance use, such as smoking cigarettes and drinking alcohol, which had non-significant main effect associations with either form of discrimination. These results lend support to a previous hypothesis that prominence could be occurring in the prediction of substance use outcomes for multiple minority adolescents (Poteat, Aragon, Espelage, & Koenig, 2009). Results from the Poteat, et al. (2009) study revealed differences in substance use outcomes across racial groups within sexual minority adolescents. While white LGB adolescents were found to be more likely to use substances than their heterosexual white peers, racial minority LGB adolescents were not more likely to use substances than their racial minority heterosexual peers (Poteat, et al., 2009). The current study confirms the possibility that prominence could be occurring in the prediction of substance use for racial minority LGB adolescents: African American LGB adolescents have experienced racism their entire lives, so additional stress as a result of more recent antigay discrimination does not have an additive influence on their substance use outcomes.

With regard to multivariate models predicting substance use outcomes, both forms of discrimination were unassociated with frequency of drinking alcohol or number of cigarettes smoked. However, racist discrimination was prominent in predicting binge drinking behaviors. Additionally, a significant interaction between racist and antigay discrimination was associated with marijuana use during the past month. While a significant interaction could support an exacerbation model of the combined influence of both forms of discrimination, the presence of one form of discrimination did not increase the influence of another form of discrimination in predicting marijuana use. In this case, antigay discrimination was only associated with marijuana use at low levels of perceived

racist discrimination. This result likely indicates that racism is prominent in the prediction of marijuana use. While these results do not fit exactly with the above statistical model of prominence, results do indicate that racism is almost always an important predictor of marijuana use, and antigay discrimination is only an important predictor of marijuana use in the relative absence of racism. In addition, racism was independently associated with marijuana use while antigay discrimination was not.

One gender difference did emerge in these patterns. Interactions between either form of mistreatment and gender were identified for cigarette use in the past month. This interaction effect revealed that, among female participants, racism was associated with cigarette use, but only at higher levels of perceived antigay discrimination. This result implies an exacerbation effect for female participants, as higher levels of antigay discrimination exacerbated the associations of racist discrimination with greater cigarette use among females.

While the current study sheds light on how concurrent racist and antigay discrimination influence substance use of African American LGB adolescents, the results also raise important questions. Perhaps most importantly: why was racist discrimination associated with substance use outcomes while antigay discrimination was not? One possible explanation is that participants who reported more racist discrimination were more engaged with the LGB community, as multiple minority individuals report experiencing racist discrimination when interacting with the LGB community (Nemoto, et al., 2003). Engagement with the LGB community is a documented risk-factor for substance use (Baiocco, D'Alessio, & Laghi, 2010; Hagman, et al., 2009; Harawa, et al., 2008). Thus, participation in the LGB community might be a third variable, which

predicts both experiences of antigay discrimination and substance use. Post-hoc analyses revealed that perceptions of racist discrimination were correlated with attendance at LGB community events among participants in this sample (r = .154), and attendance at LGB community events was associated with reports of binge drinking (r = .232).

Another possibility is that antigay discrimination targets an identity that many adolescents feel ambivalent about, and may foster more internalizing problems as adolescents attempt to cope with minority stress that they feel they deserve. Internalized coping with regard to antigay discrimination could be heightened among LGB adolescents, as they are only beginning to integrate their minority sexual orientation into their larger identity, and it is possible that they do not yet have the skills or resources to cope with this stress in other ways. In contrast, perceived racist discrimination could be less likely to be internalized, as most African American adolescents understand that racism is unacceptable. Thus, anger associated with racist discrimination may lend itself more readily to externalizing problems, including substance use.

Limitations

The present study is limited by its cross sectional design. Theoretical models indicate that stress and discrimination likely predict health outcomes (Meyer, 2003), but it is possible that certain health outcomes could influence reports of perceived discrimination (e.g., depressed individuals interpreting others' behaviors as more negative or threatening and reporting more perceived discrimination). However, experimental and longitudinal studies of perceived discrimination and health outcomes

support the idea that stress and discrimination predict health outcomes (Pascoe & Smart Richman, 2009). In order to reach a hidden and specific population of adolescents, the current study used a convenience sample, which may be a nonrepresentative sample of African American LGB adolescents. However, this is the largest sample of LGB-identified African American teens that we are aware of that includes a comprehensive assessment of psychological variables.

Another limitation of the present study is that the measures of discrimination were dissimilar. Racist discrimination was measured over the past year within multiple contexts, and antigay discrimination was measured at any time the participants were in school or on school property. These dissimilarities in our measures of mistreatment could potentially bias the results of the current study. Limiting the contexts in which antigay discrimination was measured could attenuate its associations with outcomes, particularly in multivariate models containing both forms of mistreatment. Additionally, the measures did not use the same timeframe. This could help to explain our results in that racist discrimination, measured over the past year, was associated with temporally proximal outcomes, such as marijuana use during the past month. Similarly, antigay discrimination, which potentially assessed mistreatment over the course of several years, was associated with temporally distal outcomes, such as suicidal ideation in the past year. However, measuring antigay discrimination only within the school setting could carry potential benefits. Using only school-specific experiences of discrimination likely filters out potential antigay discrimination experienced at home (C. Ryan, Huebner, Diaz, & Sanchez, 2009), potentially creating a measure which is more easily comparable to the measure of racist discrimination. In addition, minority sexual orientation is a concealable

stigmatized identity, and some social context is often required in order for others to know that one is a sexual minority. The school environment provides this social context and previous research has shown that LGB adolescents experience more antigay discrimination at school than they do within other community contexts (e.g., work, church) (Pilkington & D'Augelli, 1995).

Finally, the present study only examined suicidal ideation and did not include a more detailed inventory of self-harm intentions and behaviors (including ideation and behaviors with no suicidal intent). Previous research with LGB adolescents (Almeida, et al., 2009) has documented elevated rates of self-harm behaviors, and future research should examine suicidal and self harm intentions and behaviors among LGB adolescents.

Conclusions

In summary, results from the present study indicate that African American LGB adolescents' concurrent experiences of racist and antigay discrimination combine in different ways in the prediction of various outcomes. Both forms of mistreatment are important with regard to depressive symptoms and suicidality, and racist discrimination was more strongly associated with substance use outcomes on average. Most importantly, the present study demonstrates that stress as a result of both perceived racist and antigay discrimination is associated with the health outcomes of African American LGB adolescents. These results show that future research examining the health of multiple minority individuals should take into account the multiple ways in which these individuals could experience discrimination based upon their multiple stigmatized identities.

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